

## **Oral Statement of Arthur G. Randol III, Ph.D.**

**I am a resident of Old Town Alexandria who lives within the downwash plume of the Potomac River Generating Station (PRGS). I urge the State Department of Environmental Quality to approve the proposed permit because it will improve local air quality based on the technical analysis provided in the December 21 memo to Terry Darton.**

My reasons for this recommendation are as follows:

- 1. Our region needs more affordable electricity, not less**
- 2. Natural gas is not an option for fueling ANY power plants, especially in our region**
- 3. Merging the stacks reduces unacceptable concentrations of emissions at ground level**
- 4. Continuous Monitoring coupled with real-time modeling will provide an extra layer of environmental protection**
- 5. The levels of PM 2.5 in Alexandria are dominated by sources of vehicle and jet exhaust that contribute to our “ambient air”.**

February 7, 2008

Virginia Department of Environmental Quality  
c/o Mr. Terry Darton, Air Permit Manager  
13901 Crown Court  
Woodbridge VA, 22193  
**Email:** [thdarton@deq.virginia.gov](mailto:thdarton@deq.virginia.gov)

**RE: COMMENTS ON A DRAFT STATE OPERATING PERMIT FOR THE  
MIRANT POTOMAC RIVER LLC's POTOMAC RIVER GENERATING  
STATION RECOMMENDED BY  
THE VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY**

**Submittal of Arthur G. Randol III, Ph.D.  
3 Franklin Street  
Alexandria, VA 22314**

The Public Notice for this hearing stated:

*If the final permit is issued and the stacks are merged, those hours-of-operation limits will no longer be necessary to protect the SO<sub>2</sub> NAAQS. Under the proposed 2 stack draft permit, Mirant will be held to lower short-term emission rates than in the five stack permit except for NO<sub>x</sub>, which remains unchanged.*

**As a resident of Old Town Alexandria who lives within the downwash plume of the Potomac River Generating Station (PRGS), I urge the State Department of Environmental Quality promptly to approve the proposed permit because it will improve local air quality, meet or exceed ambient air quality standards and provide for sustained production of affordable electricity in the region.**

My reasons for this recommendation are as follows:

**1. The region needs more affordable electricity, not less**

The PRGS provides enough electricity to power 500,000 homes from the lowest cost fuel: domestic coal. The technology used to burn the coal gives us clean coal. The merged stack will improve the environmental

performance and benefit Alexandria residents.

Recent forecasts have called for more than 2,500 MWe of new electrical generation plants in the region.

A recent Washington Post article highlighted the problem [full article attached]:

### **“Threat Of Power Shortages Generating New Urgency”**

*Washington Post*

By David A. Fahrenthold, Lisa Rein and Kirstin Downey

*Washington Post* Staff Writers

Sunday, February 3, 2008; A01

***Electric power has already become painfully expensive in Washington and its suburbs. Now, local utilities say, it could become something even worse: scarce. With its humming data centers and air-conditioned mansions, the region is using 18 percent more electricity than in 2001. And as demand has gone up, so have prices. Some homeowners have seen their rates jump by half or more.***

***Utility and government officials say the region has to face the idea that its demand for electricity could overtake the supply. In a little more than three years, they say, lights could flicker off in rolling blackouts.***

The economic vitality of the region (Fairfax and Alexandria are among the wealthiest in the country) is reliant on adequate electricity supply. If the PRGS plant does not continue to operate the requirement will go to 3,000 MWe. This is not acceptable.

If the plant does not operate, costs will go up. Those that bear the burden of these costs will be lower income consumers. Paying higher electricity bills will either force choices in the fixed income budget or will force reduced use of electricity during critical times: cooling in the summer or heating in the winter.

Since the PRGS is part of an interconnected grid, any loss in the region will be felt across the entire region. We all draw from the same “pool” of

electricity. Electricity provided to the grid doesn't have an identity as some have incorrectly argued.

We all know that various groups are opposing all means to provide more electricity. They are blocking new transmission lines, new natural gas fired plants, and wind turbines in the region. I suspect that some of these special interests are behind the opposition to improving the environmental performance of the PRGS is the hopes that the plant will be shut down.

The regional and state authorities have the obligation to expose this tactic and approve the incremental improvements to our electricity supply system. Prompt approval of the proposed merged stack operating permit is an important step in this process.

## **2. Natural gas is not an option for fueling ANY power plants, especially in our region**

Some of the opponents of the permit have proposed the possibility of using natural gas. This is NOT an option.

Our region is dependent on imported natural gas, including liquefied natural gas (LNG) through the Cove Point terminal.

My home is heated with natural gas. The prices of natural gas have more than DOUBLED since 2002. Any demand to fuel another power plant in this region with natural gas will drive up home heating costs even more.

These higher costs will fall heavily on lower and fixed income families. Increasing costs of goods and services and decreasing disposable incomes harms the socio-economic status of individuals contributing to poor health and premature death. This impact has been documented in a study (attached) by M. Harvey Brenner, professor at the Johns Hopkins University, School of Public Health ("Health Benefits of Low-Cost Energy, Air & Waste Management Association, November 2005).

The Energy Information Administration (Annual Energy Outlook 2008) forecasts growing imports of natural gas, so any gas used in a power plant will be imported from the likes of Russia, Iran, and Venezuela---all members of the new natural gas cartel. I would not want to depend on

these countries to give us “cheap natural gas”.

Recent testimony in a State of Minnesota PUC Hearing provides additional insight (the full statement is attached):

*Excerpt from January 16, 2008 Statement of Dr. Robert Sansom*

*“ the largest undeveloped LNG-suitable reserves are controlled by Russia, Venezuela and Iran. In these countries, State involvement in pricing is inevitable, as is a reluctance to bring to bear the expertise and capital of non-native oil and gas companies (whether private or governmental). Thus, traditional cost of production plus a return on capital pricing will not be the ultimate pricing determinate. And an OPEC-like market for LNG is not out of the question nor an attempt to tie world LNG prices to world oil prices, which obviously would represent a significant upside pricing risk for LNG.”*

### **3. Merging stacks reduces the concentrations of emissions at ground level**

Dispersion is a very effective way of making sure there are no unacceptable concentrations of emissions at ground level where people live and breathe.

As an engineer, I understand the physics of the merged stacks. The ability to simulate the effect of having a tall stack is a very ingenious way to achieve the results of a tall stack, without interfering with the air space for Reagan National Airport.

### **4. Alexandria’s levels of PM 2.5 are dominated by sources of vehicle and jet exhaust that contribute to our “ambient air” pollution**

We live with the 14<sup>th</sup> Street bridge (I-395) and all of its traffic exhaust fumes, the Reagan National Airport and all of its jet exhaust fumes, and the expanded Woodrow Wilson Bridge (I-295) with all of its traffic exhaust fumes. The spikes in congestion on the bridges and on the airport tarmac add additional emissions at critical times every day.

In Old Town, we also are subjected to the traffic exhaust from the Mt

Vernon area commuters who use the George Washington Memorial Parkway.

It's not clear what anyone is measuring with monitors given the heavy overlay of truck, jet engine, and gasoline emissions. PM 2.5 emissions are dominated by the exhaust from trucks and jet engines, especially when the engines are idling in congested traffic.

The recent "study" presented by the City of Alexandria is flawed and should be put in perspective. The obvious deficiencies with the study:

1. There is no documentation of the ability of the model to predict actual conditions across the region, which includes major sources on PM 2.5. This validation should have been required.
2. The health effects are based on worst case scenarios, rather than real scenarios. Data does exist to create a real scenario.
3. The health effects assume that there is an individual exposed 24/7 to the worst case emissions. This is a physical impossibility. The "receptor" is on the roof of Marina Towers. Marina Towers is a closed, air-conditioned building.

**5. Continuous Monitoring coupled with real time modeling will provide an extra layer of environmental protection**

The ability to monitor emissions continuously and to use the data to drive real time models to determine 24 hour compliance is a unique benefit of the proposed permit.

The location of the receptors should be reviewed to assure that the effects of the emissions from the major traffic patterns are properly accounted for in the base line. This must include: Reagan National Airport, I-395 14<sup>th</sup> Street Bridge, and the I-295 Woodrow Wilson Bridge.

## **“Threat Of Power Shortages Generating New Urgency”**

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Sunday, February 3, 2008; A01

**Electric power has already become painfully expensive in Washington and its suburbs. Now, local utilities say, it could become something even worse: scarce.** With its humming data centers and air-conditioned mansions, the **region is using 18 percent more electricity than in 2001.** And as demand has gone up, so have prices. Some homeowners have seen their rates jump by half or more.

Utility and government officials say **the region has to face the idea that its demand for electricity could overtake the supply. In a little more than three years, they say, lights could flicker off in rolling blackouts.**

To avert such shortages, electric companies have proposed a transmission line through the Loudoun countryside, a third nuclear reactor in Calvert County and other controversial projects. Even if the projects are built, they won't come online for years. Environmentalists say the region could solve many of its problems simply by conserving energy.

**This year, leaders in Maryland, Virginia and the District will all face crucial decisions affecting the power supply.** The main question: Given that Washington loves electric power as much as other types of power, could the region make do with less of it?

**"We cannot do nothing,"** said Jone-Lin Wang, a Washington-based senior director at the analysis firm Cambridge Energy Research Associates. **"If you do nothing, and the demand for power continues to grow, then we don't have enough supply."**

**This year, local governments have been wrestling with questions about how to get electricity, how to save it and how much it should cost.** The D.C. Council is considering an investment in solar and wind power. In Maryland, Gov. Martin O'Malley (D) and the General Assembly are seeking ways to keep rates down.

And in Virginia, power giant Dominion has battled environmental groups over plans for a line connecting the region with power from the Midwest. The project's opponents say it will cut an ugly swath through Appalachian vistas. They also say the power company is exaggerating the need for the project and ignoring ways to save energy and money. "They have absolutely no interest in anything that will reduce demand," said Christopher Miller, president of the Piedmont Environmental Council, a group opposed to the line. Because the power companies are pushing ahead with the proposal anyway, he said, "something that a lot of people value for its open space and beauty is being put at risk."

For many residents, the best clue that the region is having power problems comes in a little envelope every month. The **region's major electric utilities have raised their rates an average of 52 percent since 2001**, with the largest increases coming in Maryland. Baltimore Gas and Electric rates rose 74 percent in that time; Pepco's Maryland rates, 78 percent; and Southern Maryland Electric Cooperative rates, 157 percent

In the District, Pepco rates went up 49 percent. "You spend less on other things and you save less," said Ann Loikow, a retiree in the District, whose December electricity bill was \$58 more last year than the year before. She added, "I find myself rarely going into stores except for groceries and hardware." Loikow's Pepco bill isn't her only reminder of rising energy costs. Her December gas bill was about \$26 more than it was in 2006. Washington Gas rates increased an average of 43 percent from 2002 to 2007.

The story behind the electricity price increases begins in the late 1990s, when Virginia, Maryland and the District loosened their controls on the power industry. As in many other states, the idea was to let customers choose among power suppliers, creating competition that would push prices down.

But instead, rates have gone up. Power companies say they have been hit with higher costs, which had to be passed on to customers. The prices of natural gas and coal have increased sharply. And because the region needed to import electricity from other areas, utilities had to pay the power-line equivalent of highway tolls.



Some consumer advocates contend that the power companies have abused their new freedom, raising prices to boost profits. "We have invested time and money in this for seven years," said Paula Carmody, director of the Maryland Office of the People's Counsel, which advocates for residential ratepayers. "And the end result is we have some of the highest rates in the nation."

**The region's increasing energy needs are attributable, in part, to its increasing population. But Washington area residents and businesses also seem to be using many more kilowatts per capita than in the past. In Northern Virginia, for instance, 22 computer data centers have been built, and 24 more are on the way, according to Dominion. Those hives of computer servers are often the size of a small Wal-Mart, and the company says they use about 25 times as much power.**

Across the region, new homes are often wired with high-tech, high-energy entertainment systems, as media-room gadgets creep out into bedrooms and kitchens. "Imagine getting woken up by your favorite song in the morning, going downstairs . . . and looking at the security cameras and then, from that same panel, you're turning on your wall-mounted TV," said Mo Saad, an assistant manager at the MyerEmco AudioVideo store in Tysons Corner. "It's a lifestyle," Saad said, in which homeowners expect to be surrounded by electronics. "It's everywhere."

The growth in electricity demand has some serious environmental downsides. In Appalachia, some of the area's coal has been extracted through "mountaintop removal mining," burying mountain streams and causing major damage to the landscape.

And the region's emissions of carbon dioxide -- a major greenhouse gas -- have grown rapidly, because of its heavy reliance on coal-burning power plants. "Increasing electricity almost inevitably leads to more global-warming emissions," said Frank O'Donnell, of the District-based group Clean Air Watch.

**Now come stepped-up warnings of serious power shortages. In December, a study by the Maryland Public Service Commission found**

**that the state might face rolling blackouts as early as 2011 or 2012. Power could be shut down for perhaps an hour at a time in certain areas, probably on hot days when air conditioners strain the grid.**

**Virginia officials have agreed with utilities that more power plants or transmission lines will be needed in that state in the next decade.** The D.C. Department of the Environment has not yet evaluated utilities' predictions of power shortfalls, an official said last week.

**Power companies are pressing for a wave of projects.** Natural gas plants have been proposed near Waldorf and Front Royal, Va. Constellation Energy wants to add a third reactor at the Calvert Cliffs nuclear power plant. And three power transmission lines have also been proposed in the area. One would begin in Prince William County, jog over to Southern Maryland and then cross the Chesapeake Bay to the Eastern Shore. The others would link the region with power plants in southwestern Pennsylvania and West Virginia.

Environmental groups say the region should try harder to save energy before it goes out looking for more. Activists say that customers could save energy by lowering their thermostats two degrees in the winter and raising them two degrees in summer; that they could buy efficient appliances and power-saving compact fluorescent bulbs; and that they could turn off computers and other electronic equipment when not using them.

On a larger scale, activists want utilities to install so-called "smart meters," which send alerts to customers, encouraging them to cut electricity usage when demand and, therefore, rates are high. A program in the District is about to test remotely operated systems that, if customers consented, would enable Pepco to turn off air conditioners for short periods on hot days. "The cheapest power plant out there," said Johanna Neumann, a staff member of the activist group Maryland PIRG, "is the one you never have to build."

**Virginia and Maryland have proposed ways of cutting back energy use in their states. But state officials, like the utilities, say they are skeptical that such programs can eliminate the area's thirst for more power. "We do not believe that conservation alone is going to get us where we need to be," said L. Preston Bryant Jr., the Virginia**

**secretary of natural resources.**

But many consumers say they are eager to try. In the District's Mount Pleasant neighborhood, for instance, a group of homeowners has proposed saving energy, and generating their own, by putting solar panels on roofs. "Every time you want to make power, you don't have to build another coal-fired power plant," said Anya Schoolman, who heads the Mount Pleasant Solar Cooperative. "I just think it's time for a different way to do business."